

YC系列差压表

YC Series Differential Pressure Gauge



YCE微压差压表（0~60kPa）

YCE Micro Differential Pressure Gauge (0~60kPa)

产品应用 Product Application

双膜片式高静压差压表主要用于过滤器的正负压力端，液体罐液位、泵出入口、输气管线和加压站等场合的压力差测量。本差压表具有较高的耐压性能，并能适用于有腐蚀性的环境中使用。

Dual-diaphragm differential pressure gauges are mainly used for measuring differential pressure across filter positive and negative pressure ports, liquid tank levels, pump inlets/outlets, air supply pipelines, pressurization stations, and other applications. These differential pressure gauges have high pressure resistance capabilities and can be applied in corrosive environments.

技术参数 Main Technical Specifications

仪表直径：100、150（mm）；	Gauge diameter: 100, 150（mm）.
精度等级：2.5%（可选1.6%）；	Accuracy class: 2.5%（1.6% optional）.
防护等级：IP65；	Protection rating: IP65.
工作环境温度：-20℃~70℃；	Operating temperature: -20℃ ~ 70℃.
过程连接：M20×1.5、G1/2/、NPT1/2或其他定制螺纹；	Process connection: M20×1.5, G1/2, NPT1/2 or other custom threads.
膜片材质：负压316L、正压316Ti；	Diaphragm material: Negative pressure 316L, positive pressure 316Ti.
接头材质：316；	Connection material: 316.
表壳材质：304；	Case shell material: 304.
机芯材质：304；	Movement material: 304.
仪表玻璃：防爆双层安全玻璃；	Gauge glass: Explosion-proof double layer safety glass.
表针：调零表针，黑色，铝；	Pointer: Black aluminum zero adjusting.
表盘：铝白底黑刻度字。	Dial: White aluminum background with black markings.

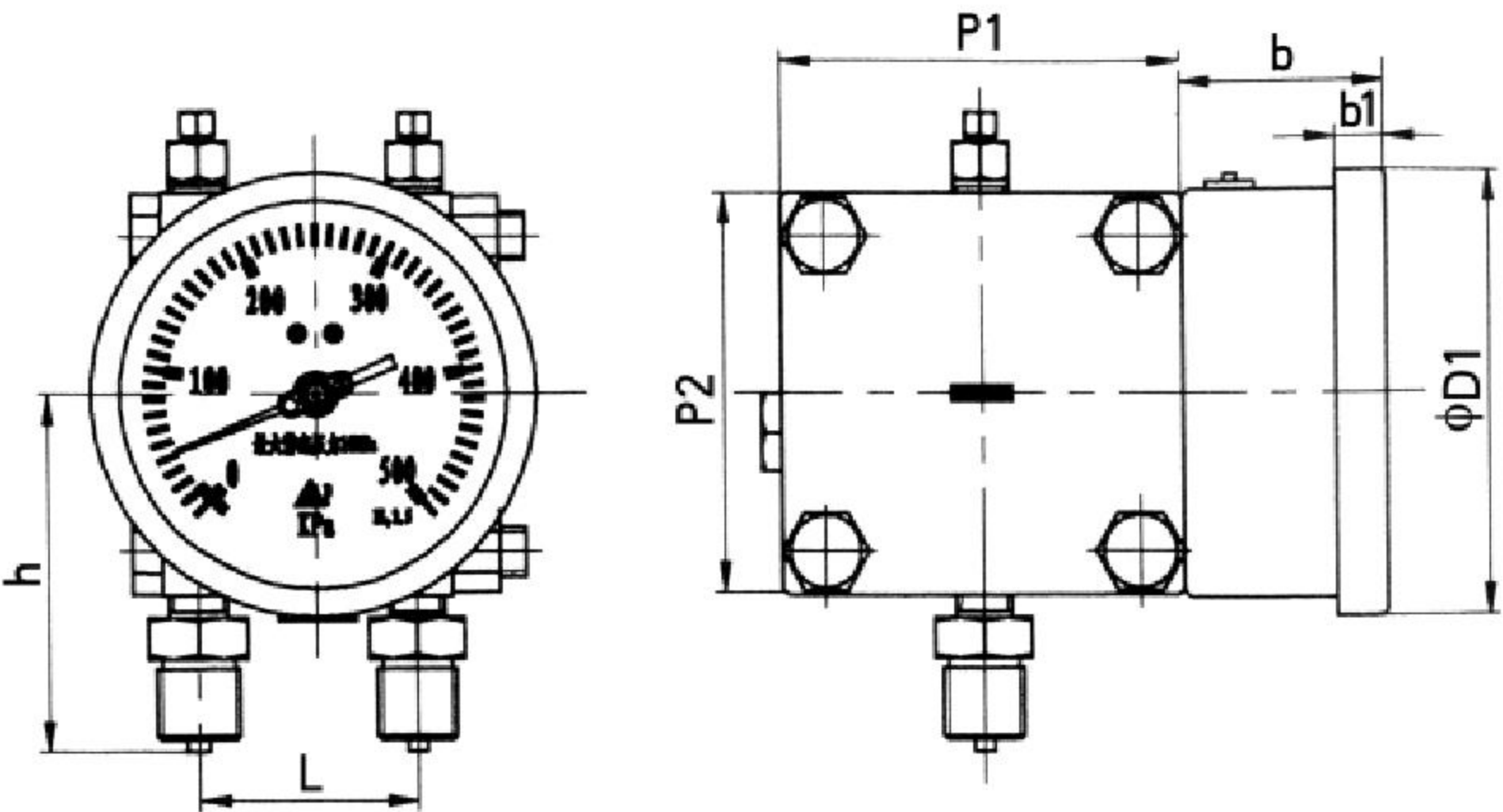
测量范围 Measuring Range

型号 Item No.	测量范围 kPa Measurement Range	精确度等级 Accuracy Grade
YCE-100 YCE-150	0~1、0~2.5、0~4、0~6、0~10、0~16、0~25、0~40	1.0, 1.6, 2.5

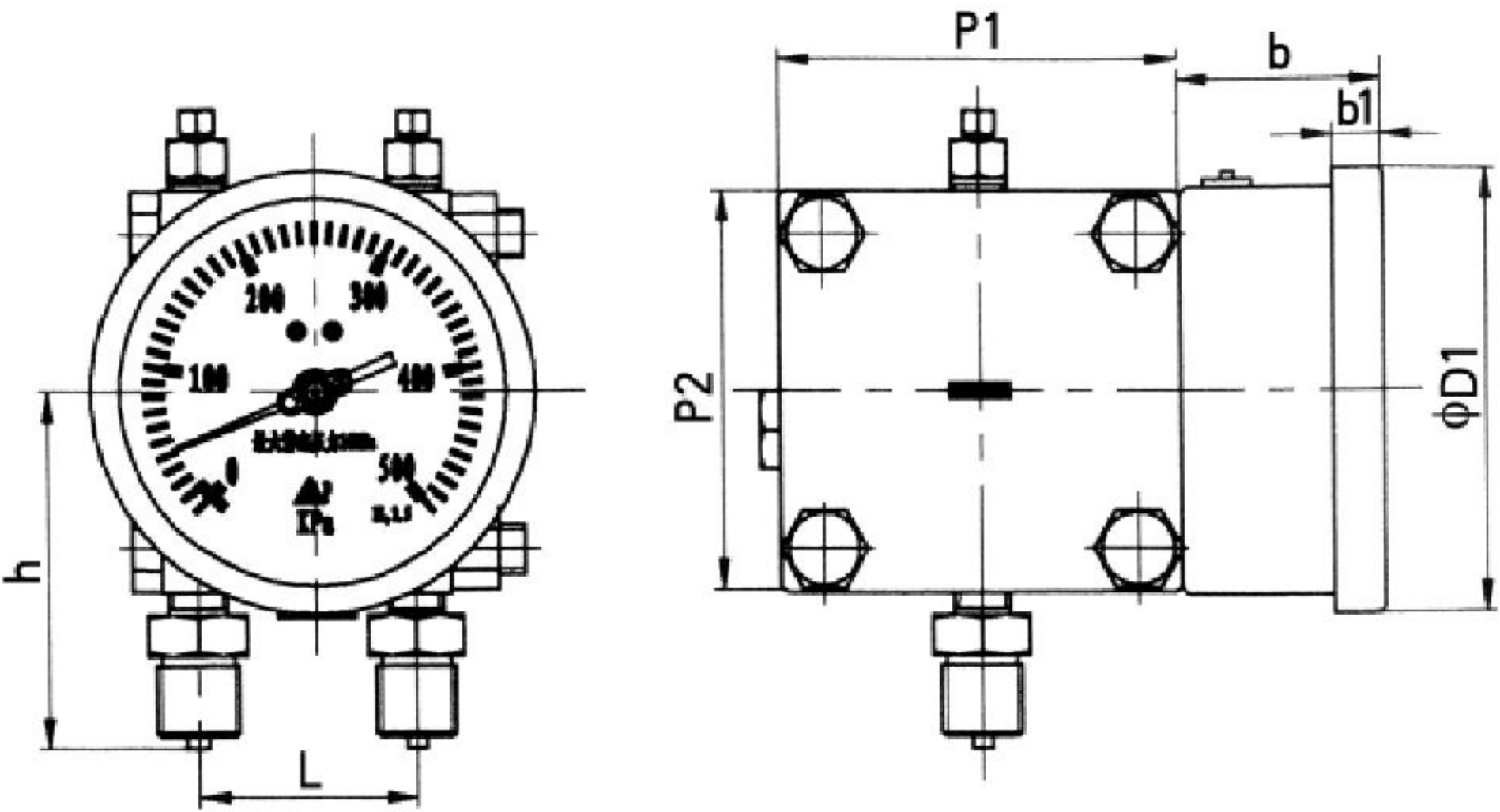
静压：表面满量程。
动压：0~10倍满量程。
过压保护：双边耐压30MPa。
Static pressure: Full scale range.
Dynamic pressure: 0~10 times full scale range.
Overpressure protection: 30MPa bidirectional pressure resistance.

产品外型尺寸 Product External Dimensions

YCE-100H



YCE-150H



型号 Model	几何尺寸 Dimensions					
	f1 D1	b1	b	P1P2	L	h
YCE-100H	110	110	51.5	100	54	100
YCE-150H	149	149	53.5			

安装

Installation

(1) 后背板安装 Back mounting

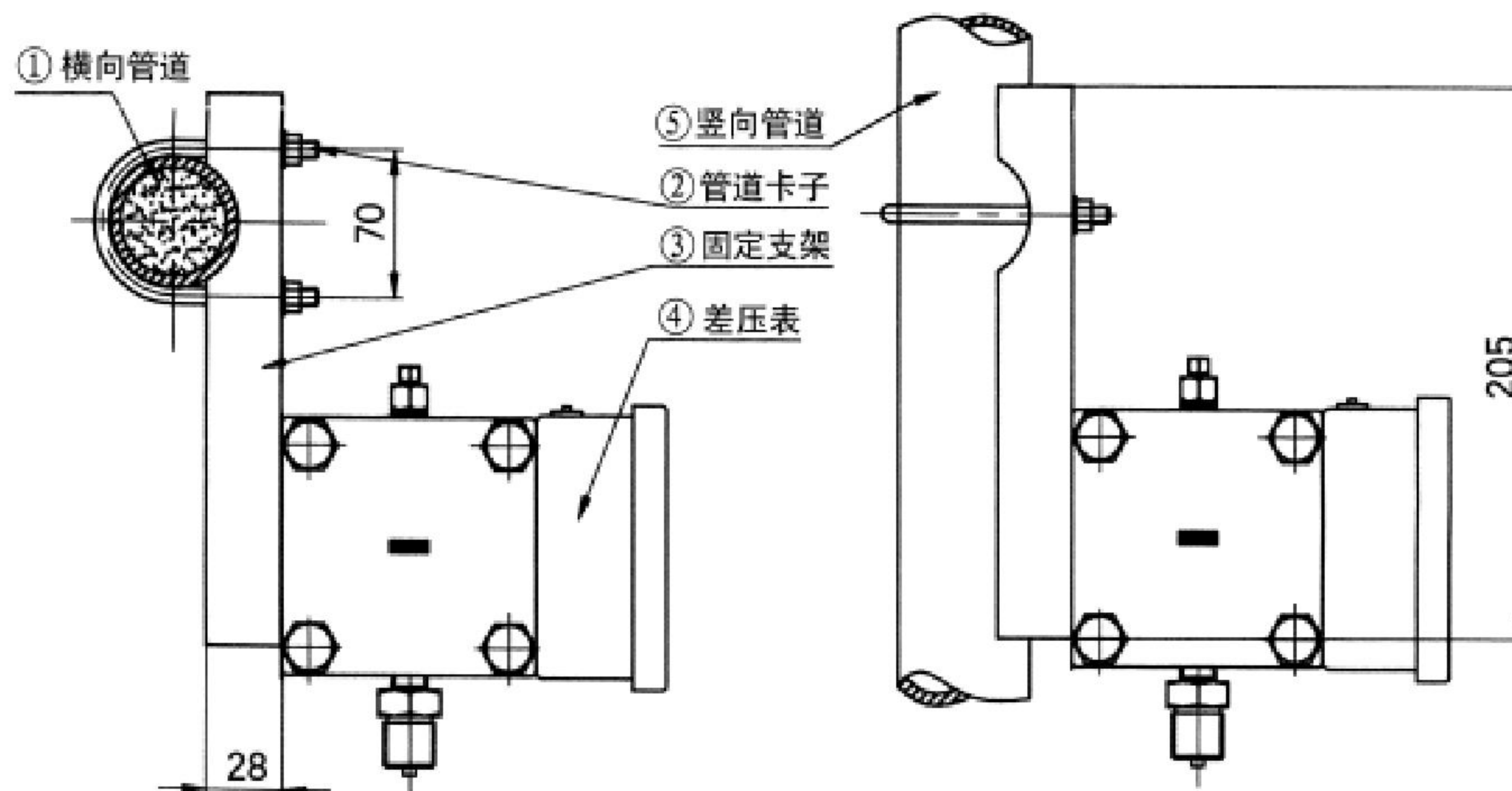
The drawing shows a differential pressure gauge (①) mounted on a back mounting plate (②). The front view shows a circular gauge face with a needle, mounted on a rectangular plate. Dimensions include a total width of 150, a mounting hole diameter of 122, and a mounting hole offset of 61 from the center. The side view shows the gauge mounted on a plate with a mounting surface (③) and a bolt set (④) securing it. Labels indicate: ① 差压表 (Differential pressure gauge), ② 后背板 (Back mounting plate), ③ 安装平面 (Mounting surface), and ④ 螺栓组 (Bolt set).

① 差压表 Differential pressure gauge
② 后背板 Back mounting plate
③ 安装平面 Mounting surface
④ 螺栓组 Bolt set

注：
1、后背板只适合平面安装（如仪表板、机器外表平面等）；
2、注意平面要坚固，使差压表安装后牢固，不会发生掉落；
3、特殊后背板可按客户要求出图加工或照来样加工。

Notes:
1.The back mounting plate is only suitable for flat surface installation (such as Gauge panels, exterior flat surfaces of machines, etc.).
2.Pay attention to ensure the mounting surface is sturdy so that the differential pressure gauge is securely installed and will not fall off after mounting.
3.Custom back mounting plates can be manufactured according to drawings provided by the customer or based on samples.

(2) 固定支架安装 Mounting with a Fixed Bracket



- ① 横向管道 Horizontal pipeline
- ② 管道卡子 Pipeline clamp
- ③ 固定支架 Fixed mounting bracket
- ④ 差压表 Differential pressure gauge
- ⑤ 竖向管道 Vertical pipeline

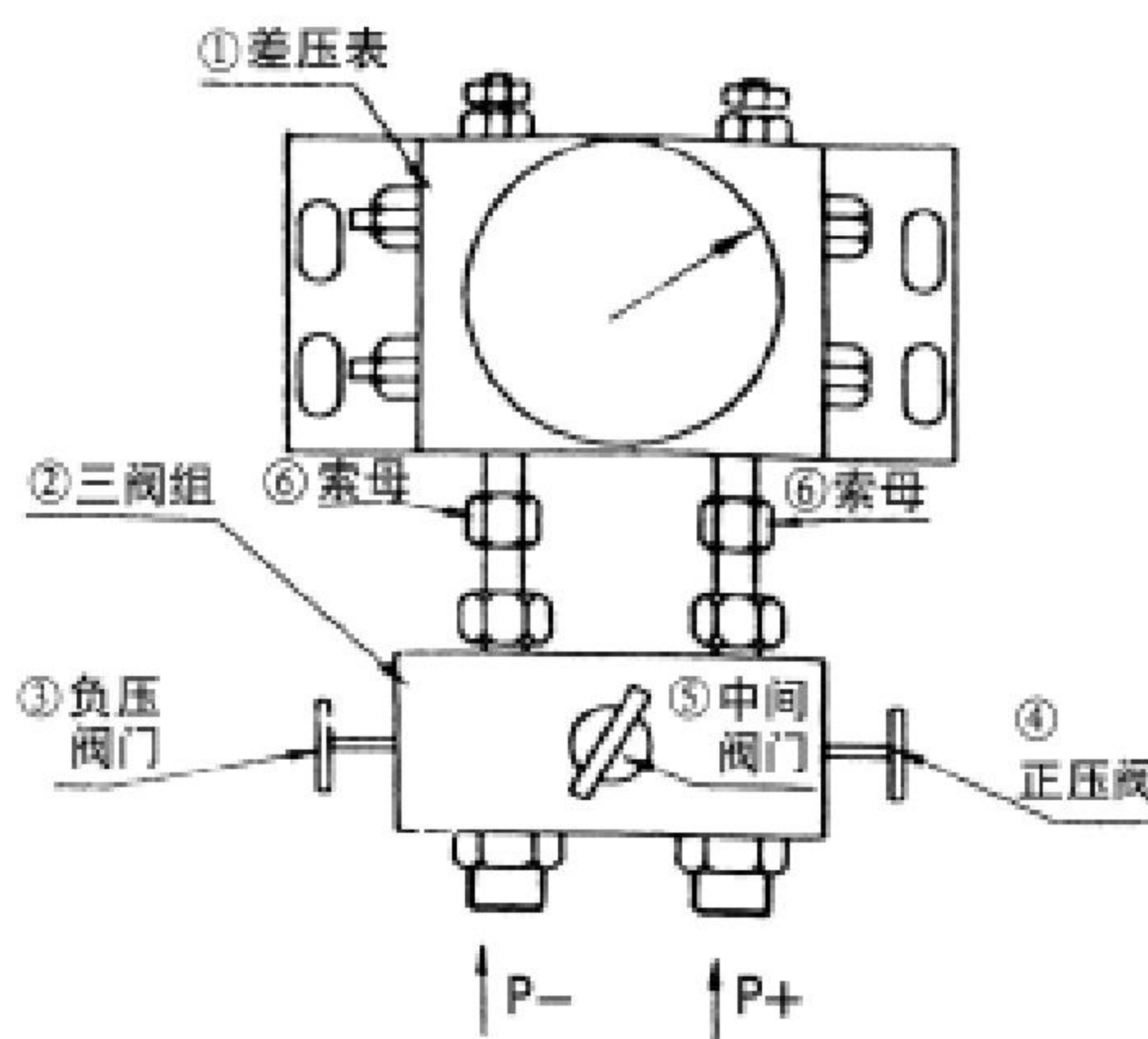
注：

- 1、固定支架安装只适用于管道安装（横向或竖向）；
- 2、注意管道的外径不能大于60mm；
- 3、仪表可以装到支架上方或下方，方便用户自由选择。

Notes:

- 1.Fixed bracket mounting is only applicable to pipeline installation (horizontal or vertical).
2. Note that the outer diameter of the pipeline cannot exceed 60mm.
- 3.The gauge can be installed above or below the bracket, allowing free selection by the user.

三阀组的安装、拆卸及使用方法 Installation, Disassembly, and Usage Methods for Three-Valve Manifolds

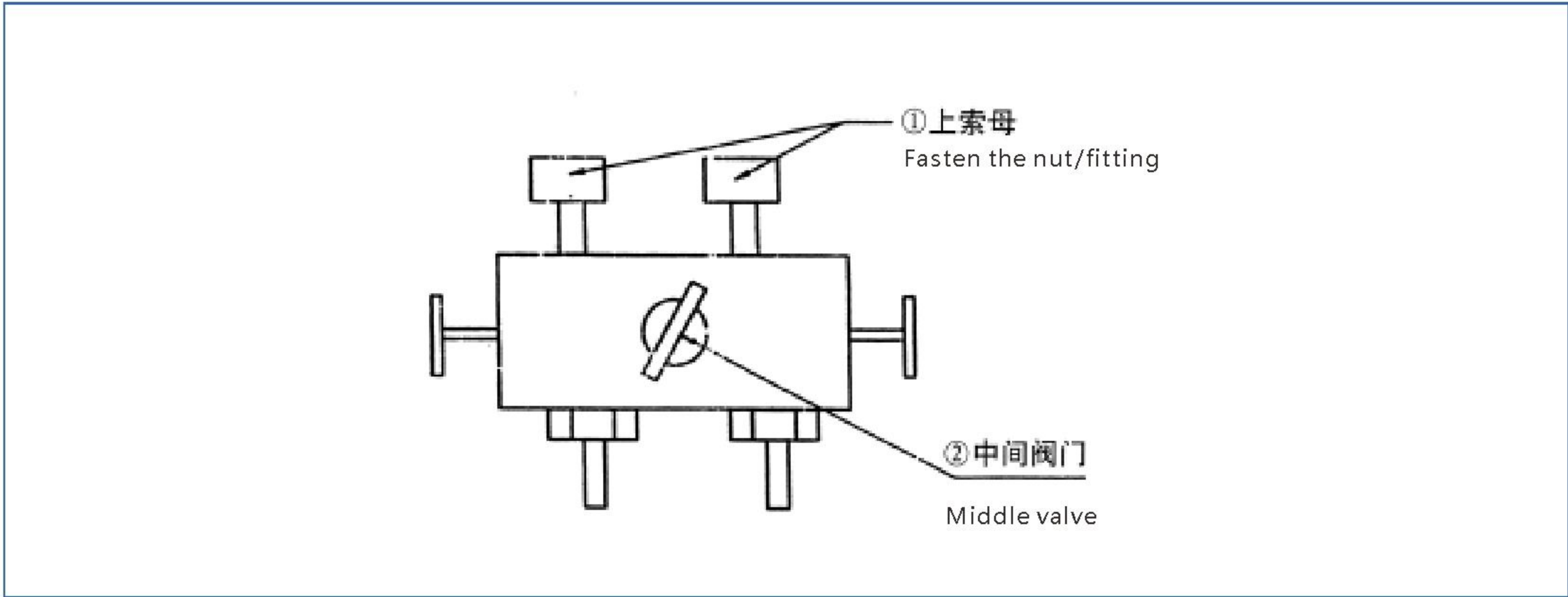


- ①差压表 Differential pressure gauge
- ②三阀组 Three-valve manifold
- ③负压阀门 Negative pressure valve
- ④正压阀 Positive pressure valve
- ⑤中间阀门 Middle valve
- ⑥索姆 Union nut/fitting

1. 正常使用差压表必须配三阀组或五阀组以保护差压表正常工作。
2. 差压表和三阀组用两个索姆紧固。索姆和差压表接头密封面应加四氟垫片。
3. 装有三阀组的差压表在使用前必须把中间阀门打开，并把正压阀门和负压阀门打开。（当 P_+ 和 P_- 任意的压力先进入时，中间阀门能起到平衡差压表两腔体内的压力的作用，以免打坏差压表。
4. 当 P_+ 、 P_- 的压力正常进入三阀组后，再关闭中间阀门使差压表正常工作。如差压表表针有轻微离零属正常，只需把表针调到零位即可（注意必须用肥皂水检验所有密封口是否泄露，如有泄露必须紧固。）
5. 差压表有后背板式安装（如图）和立管固定方法。（管卡子卡到管子上）

1. Normal use of a differential pressure gauge requires the use of a three-valve manifold or a five-valve manifold to protect the proper operation of the differential pressure gauge.
2. The differential pressure gauge and the three-valve manifold are connected using two union nuts. The sealing surfaces between the union nuts and the differential pressure gauge should be equipped with PTFE gaskets.
3. Before using the differential pressure gauge equipped with a three-valve manifold, the middle valve should be opened, and the positive pressure valve and negative pressure valve should be closed. (When the pressure P_+ and P_- enter arbitrarily, the middle valve can balance the pressure in the two chambers of the differential pressure gauge to prevent damage to the gauge.)
4. Once the pressures P_+ and P_- have entered the three-valve manifold normally, the middle valve should be closed to allow the differential pressure gauge to operate properly. If the needle of the gauge deviates slightly from zero, it is considered normal and can be adjusted to zero position (Note: all sealing points should be checked for leaks using soapy water, and if there is any leakage, it should be tightened).
5. The differential pressure gauge can be installed with a backplate (as shown in the figure) or fixed on a vertical pipe using pipe clamps.

拆卸 Disassembly



选型指南 Selection Handbook

双膜片高静压差压表YCE- Double Diaphragm High Static Pressure Differential Pressure Gauge YCE-							
耐震功能 Seismic Function 不耐震 Non-seismic 耐震 Seismic			无（可省略）None (Omittable) N				
连接符号 Connection Symbol			-				
表盘直径 Dial diameter Φ100 Φ150			100 150				
安装方式 Mounting Method 后背板安装 Backplate Mounting			TH (Textbook Holder)				
精度等级 Accuracy Grade 1.6 2.5							
连接螺纹 Connection Thread M20×1.5 G1/2 1/2'NPT 其他 Others			文字注明 Specify in text				

YCW差压表 (0.1~2.5MPa)

YCW Differential Pressure Gauge (0.1~2.5MPa)

结构原理 Structure and Principle

仪表采用双波纹管结构，即两只波纹管分别安装在"工"字型支架两侧的对称位置上。"工"字型支架的上下两端分别为活动端和固定端，中间由弹簧片相连接；两只波纹管呈平行状态，分别用导管于表壳上的高低压接头相连接；齿轮传动机构直接安装在支架的固定端，并通过拉杆与支架的活动端相连接；度盘则直接固定在齿轮传动机构上。

仪表的工作原理：基于感压元件采用两只具有相同刚度的波纹管，因此在同一被测介质下迫使其产生相同的集中力分别作用与活动支架上，由于弹簧片两侧在等力矩作用下不产生挠度，故支架还处于原始位置，这样齿轮传动机构也不动作，是指针仍指在零位。

当施加不同压力（一般高压端高于低压端）时，两波纹管作用在活动支架上的力则不相等，使分别产生相应的位移，并带动齿轮传动机构传动并予放大，由指针偏转后指示出两者之间的差压值。

The Gauge adopts a double bellows structure, where two bellows are symmetrically installed on the sides of the "T" shaped bracket. The upper and lower ends of the "T" shaped bracket are the movable end and fixed end respectively, connected by spring plates. The two bellows are parallel and connected to the high and low-pressure joints on the case through conduits. The gear transmission mechanism is directly installed on the fixed end of the bracket and connected to the movable end of the bracket via a connecting rod. The dial is fixed directly on the gear transmission mechanism.

The working principle of the Gauge is based on the use of two bellows with the same stiffness as the sensing pressure elements. Under the same measured medium, they exert the same concentrated force on the movable bracket. Due to the equal moment of force on both sides of the spring plate, there is no deflection, and the bracket remains in its original position. Therefore, the gear transmission mechanism remains stationary, and the pointer points to zero.

When different pressures are applied (generally higher pressure on the high-pressure side compared to the low-pressure side), the forces exerted on the movable bracket by the two bellows become unequal, resulting in corresponding displacements. This movement drives the gear transmission mechanism, which amplifies the displacement and causes the pointer to deflect, indicating the differential pressure value between the two pressures.

技术参数 Main Technical Specifications

仪表直径：100、150 (mm) ；
精度等级：2.5% (可选1.6%) ；
防护等级：IP65；
工作环境温度：-20℃~70℃；
过程连接：M20×1.5、G1/2/、NPT1/2或其他定制螺纹；
膜片材质：负压316L、正压316Ti；
接头材质：316；
表壳材质：304；
机芯材质：304；
仪表玻璃：防爆双层安全玻璃；
表针：调零表针，黑色，铝；
表盘：铝白底黑刻度字。



Gauge Diameter: 100, 150 (mm).
Accuracy Class: 2.5% (optional 1.6%).
Protection Rating: Ip65.
Operating Ambient Temperature: -20°C to 70°C.
Process Connection: M20×1.5, G1/2, NPT1/2, or other customized threads.
Diaphragm Material: Negative pressure - 316L, Positive pressure - 316Ti.
Connection Material: 316.
Case shell Material: 304.
Movement Material: 304.
Gauge Glass: Explosion-proof double-layer safety glass.
Pointer: Zero-adjustable pointer, black color, made of aluminum.
Dial: Aluminum with white background and black engraved markings.

测量范围 Measuring Range

型号 Item No.	测量范围 MPa Measurement Range	精确度等级 Accuracy Grade
YCW-100 YCW-150	0~0.06、0~0.1、0~0.16、0~0.25、0~0.4、0~0.6、0~1.0、0~1.6、0~2.5	1.0, 1.6, 2.5

静压：表面满量程；
动压：0~10倍满量程；
过压保护：双边耐压30MPa。
Static Pressure: Full scale range.
Dynamic Pressure: 0 to 10 times the full scale range.
Overpressure Protection: Bi-directional pressure resistance up to 30 Mpa.

选型指南 Selection Handbook

差压表YCW- Differential Pressure Gauge YCW-						
耐震功能 Seismic Function 不耐震 Non-seismic 耐震 Seismic	无（可省略）None(Omittable) N					
连接符号 Connection Symbol	-					
表盘直径 Dial diameter Φ100 Φ150			100 150			

安装方式 Mounting Method 后背板安装 Backplate Mounting	TH (Textbook Holder)	
精度等级 Accuracy Class 1.6 2.5		
连接螺纹 Connection Thread M20×1.5 G1/2 1/2'NPT 其他 Others 文字注明 Specify in text		